United States Patent [19]

Levien et al.

[11] **Patent Number: 4,758,830**

[45] **Date of Patent: Jul. 19, 1988**

[54] **SWITCH/DISPLAY UNITS**

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[21] Appl. No.: **727,425**

[22] Filed: **Apr. 26, 1985**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 664,548, Oct. 25, 1984.

[51] **Int. Cl.**[4] **G09G 1/00**

[52] **U.S. Cl.** ..... **340/712**; 340/365 C; 178/18

[58] **Field of Search** ..... 340/712, 711, 706, 365 C, 340/365 P, 365 R; 178/18, 17 C

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[57] **ABSTRACT**

A switch/display unit comprises a dot matrix display, having two sets of elongate electrodes, one set being inclined to the other, these sets being applied to opposite sides of a display medium. A transparent dielectric panel is superimposed in front of the display, so that the first set of electrodes, which are formed from a transparent conductive material abut the rear surface of the dielectric panel. A transparent conductive layer is formed in front of the dielectric panel, so that it will capacitively couple electrodes of the first set of electrodes with other electrodes of the first set of electrodes or other electrodes on the rear surface of the dielectric panel. This capacitive coupling may be varied by touching or moving the conductive layer. By applying read pulses to one of the sets of electrodes that are capacitively coupled via the conductive coating and sensing the pulses transmitted to the other electrodes, actuation of the switch can be detected. Circuitry is also provided to apply display control pulses to the first and second sets of the elongate electrodes, so as to provide a display which may change in response to actuation of the switch. Several such switch/display units may be combined into an array, utilizing a common dielectric panel and other components.

21 Claims, 4 Drawing Sheets